July 25, 1985

Dear Manufacturer: CD-85-11

Subject: Allowable Maintenance Regulations--Questions and Answers

Enclosed is a compilation of questions and answers regarding the new allowable maintenance regulations which were published on March 15, 1985. Additional questions should be directed to the attention of your certification team. We will update the enclosed list with answers to any questions that we would expect to be of general interest to other manufacturers.

Sincerely yours,

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Enclosure

Allowable Maintenance Questions
July 25, 1985

Question 1: §86.088-25(b)(6)(ii)(C) states that maintenance warning lights "shall be actuated at the appropriate mileage point or by component failure." Under what circumstances may a manufacturer use a component failure light instead of a mileage-actuated light?

Paragraph 86.088-25(b)(6) defines critical emission-related maintenance and requires that such maintenance have a reasonable likelihood of being performed in use. Subparagraphs (ii)(A) through (F) provide conditions under which critical

emission-related maintenance will be accepted as having a reasonable likelihood of being performed in use. Subparagraph (C) provides the alternative of using a warning light.

In considering whether a mileage light or component failure light will be acceptable, we must look to the maintenance instruction the manufacturer is trying to demonstrate will likely be performed in use. If the instruction is to perform the maintenance at a designated mileage point, then there must be a reasonable likelihood the maintenance will be performed as required--at the designated mileage point. Thus, for this type of maintenance instruction, a mileage activated light must be used. If the manufacturer used a component failure light in lieu of a mileage activated light, we would have no basis to conclude the maintenance would be performed at the designated mileage interval. If a mileage actuated light is used, then the manufacturer would be

permitted to perform the required maintenance on its durability vehicles at the designated point, and could specify such maintenance at the designated mileage point as required maintenance in its instructions to the consumer.

The option to use a component failure light, in effect, provides the manufacturer the option of requiring unscheduled maintenance instead of scheduled maintenance in its instructions to the consumer for proper maintenance of its vehicles. If a manufacturer uses a component failure light and not a mileage actuated light, then it cannot "require" maintenance at a designated mileage point. The required proper maintenance instructions could only require the maintenance to be performed if the component failed (i.e., if the light came on).

A manufacturer using a component failure light may wish to recommend to its consumers they perform preventative maintenance before the minimum interval to avoid having the component fail and have the light come on at an inconvenient time. This would be an example of "maintenance beyond that approved by the Administrator as reasonable and necessary" which is permitted in §86.087-38(d). Such maintenance may be included in the written instructions furnished to the vehicle owner provided such instructions clearly state, in a form approved by the Administrator, that the owner need not perform such recommended maintenance to maintain the emission warranty or manufacturer recall liability.

Question 2: How do the categories of allowable maintenance (i.e., emission-related and non-emission-related) impact a manufacturer's recall liability?

EPA will consider emission-related maintenance items when determining eligibility of vehicles to be included in EPA's recall testing sample. The criteria which would be used for a specific class of vehicles would be determined based upon such factors as the type of test program (surveillance, confirmatory, etc.), the anticipated impact a particular maintenance item may have on the vehicle's emission performance, and information as to whether a particular maintenance item is actually being performed in use.

We anticipate non-emission-related maintenance will generally not be used to determine vehicle eligibility although some of this maintenance may be performed by EPA prior to testing.

Question 3: How do the categories of allowable maintenance (i.e., emission-related and non-emission-related) impact the emissions warranties? Can a manufacturer require that non-emission-related maintenance be performed as a condition to

keeping the emission warranty in force?

The Clean Air Act requires a manufacturer to offer two emission warranties on its vehicles or engines. The first is the defect warranty required by section 207(a) and the second is the performance warranty required by section 207(b). The

establishment of the categories of emission-related and non-emission-related maintenance in 40 CFR Part 86 only indirectly affects a manufacturer's emission warranty responsibilities.

EPA's longstanding position is that the performance of scheduled maintenance may not be made a prerequisite to defect warranty coverage. Therefore, written instructions to the owner may not condition the defect warranty on the performance of scheduled maintenance, nor may a manufacturer require an owner to produce evidence of the performance of scheduled maintenance prior to making a defect warranty claim. However, a manufacturer may deny a defect warranty claim if it can show that the part failure was not due to a defect, but rather due to improper or neglected maintenance. In this regard, the new

maintenance categories have no effect on the defect warranty.

Similarly, EPA's position is that once a maintenance interval has been established in the written scheduled maintenance instructions, the manufacturer's emissions defect warranty liability for the subject part generally ends at the first replacement interval or at the end of the vehicle or engine's overall emissions warranty coverage, whichever occurs first. (An instruction to "check and replace if necessary," or other similar language, does not end the warranty period.) The new categories for allowable maintenance do not change EPA's position, but for non-emission-related maintenance items

manufacturers are free to determine the frequency of the maintenance interval, whereas, for emission-related maintenance manufacturers are constrained to having intervals not more frequent than the minimum intervals allowed by 40 CFR 86.08X-25.

These comments should not be construed to mean that absolutely no defect warranty responsibility exists beyond a

scheduled replacement interval. The manufacturer is not required to warrant a part's durability longer than the replacement interval. However, non-durability related design defects might still require remedy beyond the replacement interval if simple replacement of the original part would simply perpetuate the defective design.

With regard to performance warranties, a manufacturer may deny a warranty claim on the basis of noncompliance with the written instructions for proper maintenance and use, subject to the conditions and limitations of 40 CFR 85.2104. The regulations, subject to the provisions of 40 CFR 86.087-38, allow the inclusion of both emission-related and non-emission-related maintenance in the "written instructions for proper maintenance and use." However, we emphasize the requirement of 40 CFR 85.2104(h)(3) which states a manufacturer may not deny a warranty claim on the basis of "noncompliance with any written instruction for proper maintenance and use which is not relevant to the reason the vehicle failed to

comply (emphasis added) with applicable emission standards." In other words, a manufacturer must show a direct causative

effect between the lack of maintenance in accordance with written instructions and failure of the vehicle to comply with emission standards. This limitation applies regardless of whether the maintenance was classified as emission-related or non-emission-related. However, as a matter of practicality, it would normally be very difficult to make the above "relevance" showing for most non-emission-related maintenance instructions.

Question 4: The regulations state that EPA does not consider inspections to be items of maintenance which ensure proper functioning of the emission control system and that such instructions cannot condition a manufacturer's recall or warranty liability. Can a manufacturer specify a functional test followed by repairs necessary to pass the functional test?

EPA views a functional test as being an inspection. Hence, functional tests accompanied by instructions to repair parts as necessary to pass the functional test cannot condition recall or warranty liability.

Question 5: Can a manufacturer schedule inspections/functional tests on certification durability vehicles as long as in its instructions to the consumer it includes the required statement in §86.087-38(d)

that the owner need not perform such inspections to maintain the emission warranty or manufacturer recall liability?

A manufacturer is not permitted to condition warranty or recall liability on whether or not a consumer follows an inspection instruction.* Therefore, it is not consistent to allow and EPA generally will not permit scheduled inspections on certification test vehicles. However, EPA recognizes there is a place for certain types of inspections of test vehicles. Paragraph 86.088-25(d) establishes limited circumstances where a manufacturer may perform unscheduled maintenance on light-duty durability data vehicles. In most cases, this paragraph would come into play when a malfunctioning part is discovered as a result of an overt condition or, in some very narrow circumstances, as a result of a significant change in emission levels. However, the regulations do not preclude the possibility that a manufacturer might find a malfunctioning part through some other mechanism. Unscheduled maintenance to

* The regulations at §86.087-38(d) permit manufacturers to recommend inspections in the written instructions for proper maintenance and use provided that "such instructions clearly state...that the owner need not perform such inspections... to maintain the emission warranty or recall liability." The preamble (at FR 10643) to these regulations elaborates, stating that "inspections do not constitute maintenance because they reveal rather than prevent part failure....Thus inspections do not assure the proper functioning of the

emission control system, and may not be specified as scheduled maintenance items required to maintain emissions warranty or recall protection."

such a part can be performed if it fits one of the allowable circumstances in paragraph (d). This implies that a manufacturer may be permitted to conduct some form of casual inspection of durability vehicles. The regulations are designed to assure the representativeness of the durability vehicle by placing very narrow conditions on when unscheduled maintenance may be performed. As a matter of practicality, EPA realizes that a manufacturer is going to watch its durability vehicles very closely and frequently look under the hood to make sure there are no obvious failures or disconnected or broken parts. It is not practical to prohibit such continuous visual "inspection" of durability vehicles as long as we are confident the continued representativeness of the test vehicle is assured.

Any inspection (including functional tests) which could effect the emissions performance of a certification durability vehicle in any way, as a result of simply performing the inspection itself, is prohibited on durability vehicles.

Although EPA does not consider inspections to be maintenance within the context of warranty or recall liability, this does not mean that the performance of certain types of inspections could not effect emissions, and hence, the representativeness of a durability vehicle. The regulations require that maintenance performed on durability vehicles conform with that which is included (and which is allowed to be included) in the

instructions to the consumer. The regulations allow the manufacturer to perform less maintenance on durability vehicles than included in the instructions to the consumer (see 40 CFR 86.087-38(b)), but the reverse, performance of additional maintenance on durability vehicles beyond that in the instructions is not permitted. Inspections, which in themselves could effect emissions performance, would be considered such prohibited "additional" maintenance.

In general, visual inspections are the only inspections which are accepted by EPA as not having any potential to affect emission performance. When such an inspection identifies the need for any form of maintenance, only that which is permitted as unscheduled maintenance under the provisions of 40 CFR

86.087-25(d) may be performed. All functional tests, and any other inspection which results in touching, moving, shaking or cleaning any component which has any bearing on the emissions performance of the vehicle, are presumed to have a potential for affecting emissions and are prohibited unless the manufacturer gains advance approval from EPA to perform such inspections based upon a showing that a given inspection will not affect emissions in any way.

Question 6: Can a manufacturer require the purchaser to perform maintenance which was not conducted on durability vehicles?

40 CFR 86.087-38(b) requires all scheduled maintenance performed by the manufacturer on certification durability vehicles be specified to the purchaser in the written instructions for proper maintenance and use. In addition, in cases where the manufacturer performs less maintenance on certification durability vehicles than the allowed limit, the manufacturer may specify (as required maintenance) the performance of any additional scheduled maintenance allowed under 40 CFR 86.087-25. This includes the balance of any allowed emission-related maintenance as well as any additional non-emission-related maintenance. Furthermore, a manufacturer

may recommend maintenance in addition to that approved in 40 CFR 86.087-25 as reasonable and technologically necessary, but in this case, only if the recommendation is accompanied by an approved statement informing the purchaser that such maintenance is not needed to maintain the emission warranty or manufacturer recall liability.

Question 7: If a manufacturer installs an oxygen sensor maintenance interval indicator light on a vehicle, does EPA set the requirements of this light (i.e., light color, size, location, etc.)?

The regulations at §86.088-25(b)(6)(ii)(C) specify that the light be "a clearly displayed visible signal system approved by the Administrator" and that "the signal must be

continuous while the engine is in operation." The regulations do not give any further guidance as to what EPA would consider to be a "clearly displayed" signal. We appeal to each manufacturer to make a reasonable judgment that its signal design is sufficiently clear to achieve the objective of informing the driver that service is required. We would hope common sense can govern in this case without any need for EPA to tell manufacturers how to design their systems. As a minimum, the guidance provided in Advisory Circular (A/C) No. 36B, paragraph IV.A for visible signals is still current. To be specific, the signal should be "on the instrument panel readily apparent both night and day" and "be of the same brightness as the brake failure or charge indicator warning light." NOTE: The language in A/C No. 36B, paragraph IV.A, stating the light should not only alert the operator to the need for maintenance, but also identify which system requires maintenance has been superseded by the new regulations which require the signal to bear the general message "maintenance needed" or "check engine," or a similar message.

Question 8: Has EPA approved any words for warning lights representing multiple maintenance?

Yes. The regulations at §86.088-25(b)(6)(ii)(C) give two examples, "maintenance needed" and "check engine" both of which can apply to more than one maintenance operation. There is no requirement to have separate warning lights for each component requiring maintenance.

Question 9: The regulations at 40 CFR 85.088-25(b)(3)(ii) specify that certain maintenance will not be considered technologically necessary within the 50,000 mile useful life for light-duty vehicles. Why is the language different for light-duty trucks and heavy-duty engines specifying minimum intervals at 50,000 miles instead of no maintenance within 50,000 miles?

The difference is due to differences in the useful life for light-duty vehicles versus trucks. Since trucks have a "full" useful life, the regulations specify minimum intervals at XXXXX miles within the useful life. In the case of light-duty vehicles, the useful life is limited to the statutory 50,000 miles. EPA has concluded that some of the maintenance listed in §85.088-25(b)(3)(ii) is not technologically necessary over intervals in excess of 50,000 miles (e.g., oxygen sensors for 80,000 miles as for light-duty trucks), but since EPA's certification, recall and warranty enforcement authorities all end at 50,000 miles for light-duty vehicles, EPA simply

specified that all of this maintenance which is not considered technologically necessary for intervals equal to or greater than 50,000 miles shall not be allowed within the useful life.

Question 10: How does EPA classify each of the following maintenance operations (i.e., emission-related or non-emission-related):

A. Readjustment of air pump drive belt tension?
B. Lubrication or application of solvent to the manifold heat controlled valve?
C. Retorquing carburetor mounting bolts?
D. Lubrication or application of solvent to the choke linkage?

The classification of each of these maintenance operations is a question because the regulations do not explicitly address each of them. Hence, we must look to the intent of the regulations and to the definitions of emission-related and non-emission-related maintenance (see 40 CFR 86.084-2) to sort these out. If any manufacturer believes we have inappropriately classified any of the following items, we invite your comments on the rationale provided as well as your rationale for classifying any of these items differently.

A. Readjustment of Air Pump Drive Belt Tension

Beginning with the 1988 model year, maintenance to air injection system components is classified as critical emission-related maintenance which is not considered to be technologically necessary at intervals shorter than 50,000 miles. However, this is not interpreted as including retensioning of the drive belts. Hence, EPA will consider this as non-emission-related maintenance.

B. Lubrication or Application of Solvent to the Manifold Heat Controlled Valve

The manifold heat control valve does not appear on the list of emission-related maintenance items and, hence, is classified as non-emission-related maintenance.

C. Lubrication or Application of Solvent to the Choke Linkage

Beginning with the 1988 model year, maintenance to carburetors is classified as emission-related maintenance which is not considered technologically necessary prior to 100,000 miles. However, this is not interpreted to include lubricating, or applying solvent to the choke linkages. Hence, EPA will consider this to be non-emission-related maintenance.

D. Retorquing Carburetor Mounting Bolts

This is not considered to be carburetor maintenance and, hence, is not included on the list of emission-related maintenance items having allowable maintenance restrictions. The regulations give engine bolt torque as an example of non-emission-related maintenance. Retorquing of carburetor bolts is considered to be a subset of retorquing engine bolts. Thus, retorquing of carburetor mounting bolts is classified as non-emission-related maintenance.

Question 11: Will differences in future model year maintenance

schedules caused by the new allowable maintenance regulations preclude carryover of durability data from previous model year test vehicles which received more frequent maintenance than is permitted by the new regulations?

Carryover of durability data will not automatically be precluded due to differences in maintenance schedules. However, it will be necessary to conclude that the deterioration factor determined from any carryover data is still representative of the new model year vehicles.

It is not possible at this point to specify rigid carryover/carryacross criteria which can cover every circumstance that might arise. We will have to consider each situation on a case-by-case basis. Because of this, manufacturers are not delegated the authority to approve their own carryover/carryacross situations under abbreviated certification review (ACR) procedures if there are changes to the maintenance schedule involving emission-related maintenance. After EPA has the opportunity to evaluate a number of specific cases, we would hope to publish more definitive guidance which would enable us to delegate the decision process to the manufacturer. However, there are several scenarios where we can give some general guidance at

this time.

Scenario A: The manufacturer recommended more frequent maintenance to the consumer but did not actually perform the maintenance on its durability vehicle.

There should be no problem in allowing carryover in this case if the maintenance actually performed on the durability vehicle complied with the new allowable maintenance constraints. The manufacturer would only have to update its instructions to the owners to bring these instructions into conformance with the requirements of 40 CFR 86.087-38.

Scenario B: The durability vehicle had more maintenance (or more frequent maintenance) performed than allowed by the new regulations but no change to the emission control system is being made (i.e., the maintenance intervals are simply being extended or certain maintenance is being dropped without any change to the vehicle design).

In this case we must be able to conclude that the emission data from the original durability vehicle did not deteriorate at a lower rate than would be expected from a similar vehicle run with less maintenance being performed. To make this determination, we would look for two general criteria to be satisfied. First, there must be no obvious reduction in the actual emission performance of the durability vehicle that can be attributed to the maintenance operation(s) in question. Second, there must be no reason to have expected the vehicle's emissions to deteriorate more rapidly had the maintenance not been performed. This second criteria is the real crux of the evaluation and, unfortunately, the more difficult one to evaluate. The manufacturer will have to present data which, in

effect, verifies the original maintenance operation was not really needed and had no affect on deterioration. In cases where a component was replaced (e.g., an oxygen sensor replaced prior to 50,000 miles), the manufacturer must present data verifying the part is durable with no significant loss in performance over the full 50,000 miles (in the case of light-duty vehicles). This might be from some other durability vehicle, some form of bench testing, in-use data, or

development data. It is EPA's expectation that this showing can be made in many cases. A major part of EPA's reasoning for extending maintenance intervals was EPA's conclusion that such maintenance was not technologically necessary. However, that does not mean the best technology was applied in all circumstances. The purpose of our review is to be assured that adequately durable technology is applied and that manufacturers do not simply choose to extend maintenance intervals without improving designs where required to allow the vehicle to comply with emission standards with the less frequent maintenance.

Scenario C: The durability vehicle had more maintenance performed than allowed by the new regulations and new emission control technology is applied which requires less maintenance.

It is the desired effect of the new regulations to force the use of improved, more maintenance free technology where possible. However, when new emission control systems are applied, we must still have basis to conclude the maintenance free, "new" technology, would result in equal or less emission

deterioration than the old technology when applied in conjunction with more frequent maintenance. EPA has in the past approved carryover based upon a showing of equivalency-(or directional improvement) of a new technology compared to that which existed on a previous durability vehicle. These new cases will have to be subjected to the same type of case-by-case review. In some cases, it may be necessary to require the demonstration of the new technology in at least one engine family application before we can accept carryover across the board for a broad range of families.

Light-Duty Truck and Heavy-Duty Engine Carryover

In the case of light-duty trucks and heavy-duty engines, this determination is delegated entirely to the manufacturer. The manufacturer is charged with the responsibility of submitting deterioration factors (which it determines based upon testing of engines, components, or subsystems, subject to good engineering practice) is representative of the deterioration expected from a vehicle run under normal in-use conditions and subject to the minimum allowable maintenance constraints permitted in §86.088-25. If the manufacturer determines that changes in maintenance schedules or changes in

technology applied to its vehicles to facilitate extended maintenance schedules are likely to affect the deterioration factor derived from previous testing, it is up to the manufacturer to design and conduct whatever additional testing program is necessary to determine appropriate deterioration factors.